



PREVENTIVE MEDICINE UPDATE



MADIGAN ARMY MEDICAL CENTER

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Disease Reporting: Answers to Your Questions

by Sheryl Bedno

1. Why are certain diseases reportable?

There are several important reasons to report certain diseases and conditions:

- Prevent the spread of disease to contacts
- Detect outbreaks
- Monitor epidemiologic trends
- Guide public health programs
- Foster public health research.

2. Is it absolutely necessary to report these diseases and conditions?

Yes, in fact, in the military, it is necessary to report through two different channels.

Many communicable diseases and other conditions are required to be reported to both the local health department, by state law, and through RMES (Reportable Medical Events System), by Army regulation. According to Army regulation, one must comply with state and local medical reporting requirements. Besides reporting the diseases and conditions, it is

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West Nile Virus

by Jason Wieman

The West Nile Virus (WNV) was first isolated in 1937, and has been known to cause disease in humans in Africa, West Asia, and the Middle East. Human and animal infections were not documented in the Western Hemisphere until 1999. In 1999 and 2000, outbreaks of WNV encephalitis (inflammation of the brain) were reported in persons living in the New York City metropolitan area, New Jersey, and Connecticut. In these two years, 83 human cases of West Nile illness were reported; 9 died. In 2001, human infection with WNV occurred in 10 states with 66 cases and 9 deaths. In 2002, WNV activity spread to 44 states, with 4,156 human cases and 284 deaths.

WNV is transmitted to humans through mosquito bites (*Culex Tarsalis* is the most common in Colorado and is widespread in WA). Mosquitoes become infected when they feed on infected birds that have high levels of WNV in their blood. Infected mosquitoes can then transmit WNV when they feed on humans or other animals. WNV is not transmitted from person to person and there is no evidence that a person can get infected by handling live or dead infected birds. But, to add a further level of safety, if birds or other potentially infected animals must be handled, a protective barrier (e.g., gloves, inverted plastic bags) should be used.

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Contact Preventive Medicine:

Page 596-9367 or call 968-4479

Send consults by CHCS

Website: [http://www.mamc.amedd.](http://www.mamc.amedd.army.mil/preventive_med/main_pm.htm)

[army.mil/preventive_med/main_pm.htm](http://www.mamc.amedd.army.mil/preventive_med/main_pm.htm)

required to cooperate with the local health department in investigation and control procedures.

3. Are the same diseases and conditions reportable to all local health department and to the military?

Most of them are the same. However, there are certain conditions that are particularly relevant to the military such as heat and cold injuries. Also, not all local health departments require reporting of the same diseases. Tacoma-Pierce County, for example, requires reporting of latent tuberculosis infection while many other county health departments do not.

4. Where do I get information on which diseases are reportable?

The Preventive Medicine website contains the Triservice list of reportable medical events. This list applies to the Army as well as to the Navy and Air Force. Those diseases which are reportable to the local/state health department can usually be found on the department's website.

For Tacoma-Pierce County's list:

<http://www.tpchd.org/cdc/Diseases.html>

If you are still not sure, please page the PMOD (596-9367).

5. Help! How exactly do I report these diseases?

The Preventive Medicine Department is here to help facilitate disease reporting. We can fill out the necessary paperwork and report to both the county health department and to RMES. You simply need to contact us and provide the details of the case. Furthermore, we will act as a liaison if further investigation and control procedures are necessary.

6. Do I first need confirmation of the disease or condition before reporting it?

No. Please report both **suspected** and confirmed cases. It is crucial to report even suspect cases so we can initiate public health control actions. We can modify the report later if the disease or condition is ruled in or out.

See final page of the Update for a list of the reportable diseases and conditions. Save this valuable reference.

Exertional Heat Illnesses: Identification and Prevention

by Kent Bennett

The recent heat wave should remind all leaders of the importance of preventing heat injuries and illnesses. A soldier is best equipped to deal with heat stress when he is fully hydrated, acclimatized, well rested and physically fit. Maintaining adequate hydration is the most important element in preventing heat casualties. In hot environments, thirst is not stimulated until one's plasma osmolality rises 1-2% above the level customary in temperate climates. Therefore, when soldiers rely on thirst to guide their drinking they are 1-2% dehydrated relative to their normal state. For this reason it is important for the unit leadership to enforce mandatory hydration policies using water consumption tables to guide drinking requirements. Soldiers must drink enough fluids to replace the water they lost to sweating. Work rest cycles are another important preventive measure in avoiding heat illnesses.

It is important to plan for extra water usage during the acclimatization process, especially when short notice deployments occur. Since the ability to conserve salt develops slowly, work-rest cycles should be utilized whenever possible. Salt depletion can be avoided by providing salt supplementation in the form of a 0.05 to 0.1% solution (See USARIEM Technical Note 91-3). When acclimatized the need for salt supplementation will cease. Adequate physical fitness will help to provide some acclimatization as well as allow for more efficient blood flow and hence thermoregulation. Decreased sleep and nutrition reduce a soldier's thermoregulatory capacity and so will also increase the risk of a heat illness. Thermoregulation is also impeded by sunburn. Finally, certain medications can increase the risk of a heat illness by impairing the body's ability to thermoregulate. Should an exertional heat injury or illness occur it is important that prompt recognition and treatment occur at the section and unit level.

An exertional heat illness is a multisystem illness in which a person may present with staggering or collapse following exercise, confusion or amnesia, or inability to continue work. Other symptoms can include: dizziness, fatigue, headache, visual abnormalities, thirst, muscle cramps, GI distress, elevated core body temperature and altered mental status. All heat injuries should be categorized into one of two groups to direct treatment.

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Patients with mild exertional heat illness (heat exhaustion, exertional dehydration, Heat cramps, potential hyponatremia) are alert with appropriate behavior and have stable, near normal vital signs. These patients are able to drink fluids and are those patients who are expected to recover fully within one hour. If a patient is not expected to recover within an hour; if the patient is unstable; or if the patient is categorized as a severe exertional heat illness: immediate evacuation to the emergency department should be undertaken.

Patients with severe exertional heat illness (heat stroke, exertional heat injury, rhabdomyolysis) may exhibit mental status changes or amnesia, syncope or seizure, inability to drink fluids, rectal temperature $>104^{\circ}\text{F}$, SBP <90 and/or orthostasis, or severe muscle or abdominal pain (or numbness). Aggressive treatment should begin upon immediate recognition of the injury. Severe exertional heat illness patients will require laboratory evaluation, follow-up the day after discharge, and profiling in accordance with MAMC Guidelines (40-51).

General guidelines on field treatment include: rest in the shade, loosening clothing, and cooling if rectal temp $>103^{\circ}\text{F}$. Repeat vitals (including mental status) every 10 minutes and oral or intravenous rehydration with up to 2 liters of standard replacement fluid (oral-water, sports drink, 0.5% salt solution and IV-normal saline) until the patient is able to void. Evacuation to the ED is required if the patient worsens, continues to vomit, remains symptomatic beyond one hour or if the patient requires >2 liters of fluid. Severe exertional heat illness patients may require ACLS procedures also. These general treatment guidelines should serve as template for care and should not replace the provider's medical judgment as to further interventions as each case warrants. Finally, any heat injury that requires medical intervention and results in more than 4 hours of lost duty time needs to be reported on the Preventive Medicine Exertional Heat Illness Form in accordance with MAMC policy. Heat injuries are reportable according to the Tri-Service Reportable Events lists. Page the PMOD (596-9367) for assistance in reporting. Further information on exertional heat injuries can be found in TB Med 507, at the CHPPM website (<http://chppm-www.apgea.army.mil>), or in AR 40-5.

Most WNV infected humans have no symptoms. A small proportion develops mild symptoms that include fever, headache, body aches, skin rash and swollen lymph glands. Less than 1% of infected people develop more severe illness that includes meningitis or encephalitis. The symptoms of these illnesses can include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. The mortality rate for WNV is estimated to be less than 1 in 1000 infections.

There is no specific treatment for WNV infection or vaccine to prevent it. Treatment of severe illnesses includes hospitalization, use of intravenous fluids and nutrition, respiratory support, prevention of secondary infections, and good nursing care. Medical care should be sought as soon as possible for persons who have symptoms suggesting severe illness. Individuals can reduce their risk by taking these actions:

When outdoors, wear clothing that covers the skin such as long sleeve shirts and pants, apply effective insect repellent to clothing and exposed skin, and curb outside activity during the hours that mosquitoes are feeding (dusk to dawn). In addition, screens should be applied to doors and windows and regularly maintained to keep mosquitoes from entering the home.

West Nile Virus 2003 Human Cases as of August 19, 2003, 3 am MDT	Human Cases* Reported to CDC	Deaths
Alabama	11	2
Arkansas	1	
Colorado	262	6
Florida	4	
Georgia	2	
Iowa	9	
Kansas	4	
Kentucky	3	
Louisiana	21	
Maryland	1	
Minnesota	12	
Mississippi	14	
Missouri	1	
Nebraska	55	
New Jersey	1	
New Mexico	8	
North Carolina	2	
North Dakota	6	
Ohio	9	1
Oklahoma	3	
Pennsylvania	14	
South Carolina	1	
South Dakota	66	
Texas	66	2
Virginia	1	
Wisconsin	1	
Wyoming	21	

Reference:
<http://www.cdc.gov/ncidod/dvbid/westnile/>

**Suspected
WNV cases
should be
reported to
Preventive
Medicine.**

**Page the
PMOD for
assistance in
reporting:
596-9367**

Animal Bites

by Will Cann

from previous column

www.doh.wa.gov/Topics/rabies/q1.html

Etiology of Rabies

Rabies is a severe viral disease that affects the central nervous system. It is transmitted by a bite or lick onto broken skin or mucous membranes. The incubation period for rabies is typically between 20 and 90 days, although incubation periods as short as 4 days and as long as 6 years have been documented. In the United States rabies is extremely rare with only 1 to 6 cases reported annually. Only two cases of human rabies have been reported in Washington State since 1939, one in 1995 and 1997, respectively. From 1980 through December 2000, there were 42 human rabies cases reported in the United States. Worldwide at least 50,000 humans develop rabies each year. Rabies is universally fatal.

Animal Rabies in Washington State

In the state of Washington, bats are the only animals in which rabies is endemic. Testing from 1960-2000 revealed that 8% of 5175 bats examined were rabid. Since 1960, only 9 other animals have tested positive for rabies (horse, llama, dog, 2 cats and 4 pet skunks), the last one occurring in 2002. The state has not seen a confirmed rabid dog since 1977. The risk of rabies from a terrestrial animal is very low in Washington State.

Reporting Animal Bites on Fort Lewis

All animal bites are reportable. There are three main reasons for reporting animal bites: to assist in the diagnosis of human and animal cases of rabies, to identify contacts of a human rabies case and thus provide counseling about post-exposure prophylaxis, and to facilitate the capture and confinement of potentially rabid animals. When an animal bite victim presents to a clinic or Emergency Department, the attending physician should contact Veterinary Medicine and complete DD Form 2341. This form is submitted to Veterinary and Preventive Medicine for review and action as needed. Veterinary Medicine will determine whether or not animal quarantine is necessary. Clinicians may contact Preventive Medicine if they have questions concerning the need for treatment or post-exposure prophylaxis. Lastly, a useful treatment algorithm may be found on the Washington State Department of Health's website at:

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Nature of the encounter and true exposure

True exposure to rabies requires transfer of the infected animal's saliva to a mucous membrane or through the skin. Contact with fur, feces, urine or blood is not an exposure. Exposure is often difficult to identify with bat encounters. Bats found in confined spaces with a patient should be strongly considered an exposure. This is especially the case when the patient has been sleeping or otherwise unaware (i.e. ETOH, children, elderly).

Provoked versus unprovoked bites

Provoked bites occur when humans try to engage or handle an animal. An unprovoked animal bite has a greater risk of rabies transmission.

Importance of the whereabouts of the animal

If the animal is available it can be tested, observed and/or quarantined. A healthy dog, cat, or ferret that bites a person should be confined and observed daily for 10 days. Treatment with post-exposure prophylaxis can be withheld until animal observation and/or testing confirm the presence or absence of rabies. Trained professionals may be needed to capture and restrain the animal. It is most appropriate to allow the Veterinarian to determine what to do with the potentially rabid animal: do not destroy the animal.

What preventive measures and treatment are available after exposure to rabies?

Safe and effective treatment following potential rabies exposure should begin immediately after the exposure. Scrub the site of any animal bite with soap and water and perform deep irrigation for open wounds. Check the tetanus vaccination status of the victim. If potential rabies exposure has occurred, a one-time administration of rabies immunoglobulin and five doses of human diploid cell rabies vaccine should be given in the arm on days 0, 3, 7, 14, and 28 after exposure.

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The Medical Component of the Soldier Readiness Program (SRP) at Fort Lewis:

What medical SRP would like patient care providers to know

by Patrick Hayes

- The SRP at Fort Lewis is closely allied with MAMC, but is a Fort Lewis program
- MAMC is charged with supporting the mission of SRP, but SRP is under Fort Lewis command
- This organizational structure and close alliance with the hospital may differ from SRP programs at other installations at which providers have worked

The medical component of the SRP is largely oriented on a vaccination program, but there are important distinctions to note:

1. Unlike regular civilian vaccinations, the SRP vaccinations are related to bioterrorism (smallpox, anthrax), and are therefore associated with an increased level of soldier anxiety (for example, many people who gladly take their children to receive routine childhood vaccinations are highly anxious about the SRP vaccinations)
2. There is a great deal of public misconception about the safety and efficacy of the vaccines
3. Soldiers processing through SRP effectively become a "special population", since these vaccines are not universally offered, and many may feel this confers special risk to them, both from the vaccination effects as well as their missions as soldiers
4. Normal, robust reactions can be uncomfortable and are commonly confused with cellulitis/erysipelas (especially around eight days after vaccination)
5. Adverse reactions should be followed up by the preventive medicine clinic

The medical mission of the SRP program also includes a medical questionnaire and interview (by an MD or PA) for all AD troops deploying and redeploying, as well as all guard/reserve troops mobilizing and demobilizing

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It is from these questionnaires/interviews that referrals to MAMC primary care and specialists are generated, and they have the following characteristics:

1. All AD "hard" conditions (broken bones, dislocations, etc.) are referred to the hospital/specialist clinic and must be seen the same day
2. All AD "soft" conditions (persistent mild cough, chronic low back pain without neurological symptoms, etc.) are referred to the respective TMC
3. All guard/reserve hard and soft conditions are referred to the hospital/specialist clinic and must be seen the same day
4. The number of providers varies each day
5. Due to the nature of the military environment, family practice and orthopedics bear much of the referral burden

Referrals are made in this fashion to comply with regulations, but also because there is no way to effectively examine physical complaints at the SRP site. As it is currently, the medical interview is the most time-consuming aspect of the SRP process. Guard and reserve soldiers are given priority because of the need to return them to their pre-mobilization functions, whereas AD soldiers can continue in their daily lives while pursuing care through the TMC for "soft" issues. For "hard" issues, of course, everyone gets first available care.

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Animal Bites - continued from page 4

Pre-exposure vaccination

Recommended for travelers planning to be more than 30 days in an area of the world where rabies is a constant threat and access to save immunoglobulin and vaccine does not exist. Also recommended for any person whose occupation involves frequent risk of rabies exposure such as bat handlers, veterinarians, employees in veterinary clinics, and laboratory workers where rabies test specimens are handled.

Assistance from Preventive Medicine

Preventive and Veterinary Medicine work together to monitor and evaluate the risk of rabies exposure and the need for treatment with post-exposure prophylaxis. At MAMC, there is always a PM officer available (pager 253-596-9367) to assist and advise in the management of animal bites.

Reportable Diseases and Conditions – Suspected or Confirmed

This list include both the local and military reportable diseases & conditions

Acquired Immunodeficiency Syndrome (AIDS)	Listeriosis
Amebiasis	Lyme disease
Animal bites	Lymphogranuloma Venereum
Asthma, occupational	Malaria
Birth defects – Autism, Cerebral Palsy, FAS	Measles (rubeola)
Botulism (foodborne, infant, wound)	Mumps
Brucellosis	Paralytic shellfish poisoning
Campylobacteriosis	Pertussis
Carbon Monoxide Poisoning	Pesticide Poisoning
Chancroid	Plague
Chemical Agent Exposure	Pneumococcal Pneumonia
Chlamydia trachomatis	Polio myelitis
Cholera	Psittacosis
Coccidioidomycosis	Q fever
Cold Weather Injury	Rabies, human
Cryptosporidiosis	Relapsing Fever (Borreliosis)
Cyclosporiasis	Rift Valley Fever
Dengue Fever	Rocky Mountain Spotted Fever
Diphtheria	Rubella (including congenital)
Diseases of suspected bioterrorism origin	Salmonellosis
- Anthrax	Schistosomiasis
- Smallpox	Shigellosis
Diseases of suspected foodborne origin	Streptococcus, Group A, invasive disease
Diseases of suspected waterborne origin	Syphilis
Ehrlichiosis	Tetanus
Encephalitis, viral	Toxic Shock Syndrome
Enterohemorrhagic E. coli (E. coli O157:H7)	Trichinosis
Filariasis	Trypanosomiasis
Giardiasis	Tuberculosis
Gonorrhea	Tuberculosis, latent (positive PPD)
Granuloma Inguinale	Tularemia
Haemophilus influenza (invasive disease, under age 5)	Typhoid Fever
	Typhus Fever
Hantavirus Disease	Urethritis, non-gonococcal (NGU)
Heat Injuries	Vaccine Adverse Event
Hemolytic Uremic Syndrome	Varicella (active duty only)
Hepatitis A - acute infection	Vibriosis
Hepatitis B - acute or chronic*	West Nile Virus
Hepatitis B surface antigen positive pregnant women	Yellow Fever
	Yersiniosis
Hepatitis C - acute or chronic*	•Other rare diseases of public health significance
Human immunodeficiency virus (HIV)	
Lead poisoning	•Unexplained critical illness or death
Legionellosis	If you suspect or have confirmation of any of the above, page the PMOD for assistance (596-9367)
Leishmaniasis	
Leprosy	
Leptospirosis	

*Initial diagnosis only